

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A spacer comprising
a core which does not exhibit electronic conductivity and
at least one coating comprising at least one layer of a glass exhibiting electronic
conductivity coated on said core, wherein the glass is capable of providing the spacer an
electronic conductivity at 50 °C of 10^{-13} to $10 \text{ ohm}^{-1} \cdot \text{cm}^{-1}$, for keeping
wherein said spacer is capable of maintaining a space between two substrates formed
from glass sheets, more particularly a space of small thickness, generally less than a few
millimeters, over the entire area of the sheet substrates, in a device such as a display screen,
vacuum type insulating glazing or a flat lamp,
the surface of said spacer being is at least partly electronically conducting, and
characterized in that said spacer is formed from a core not exhibiting electronic conductivity,
the shape and the constituent material of the spacer which are chosen to provide the
thermomechanical integrity of the substrates in the device. final device, said core being at
least partly coated with at least one layer of a glass exhibiting electronic conductivity, and
capable of giving the spacer electronic conductivity at 50°C of 10^{-13} to $10 \text{ ohm}^{-1} \cdot \text{cm}^{-1}$.

Claim 2 (Currently Amended): The spacer as claimed in claim 1, ~~characterized in that~~
it wherein the spacer has an electronic conductivity of 10^{-12} to $10^{-2} \text{ ohm}^{-1} \cdot \text{cm}^{-1}$.

Claim 3 (Currently Amended): The spacer as claimed in claim 1, wherein either of
claims 1 and 2, characterized in that the glass constituting a comprised in said coating layer
comprises at least 1 mol%, preferably at least 5 mol%, of at least one oxide of a transition

element of Groups IB, IIIB, VB, VIB, VIIB and VIII of the Periodic Table of the Elements that ~~may~~ optionally exist in a number of oxidation states.

Claim 4 (Currently Amended): The spacer as claimed in claim 3, ~~characterized in that wherein~~ the transition element(s) are at least one selected from the group consisting of V, Cr, Mn, Fe, Co, Ni, Cu, Nb, Mo, Ru, Rh, Ta, W, Re, Os, Ir, Ce, Pr, Nd, Sm, Eu, Tb, Dy, Tm and Yb.

Claim 5 (Currently Amended): The spacer as claimed in claim 1, wherein ~~one of claims 1 to 4, characterized in that~~ the glass constituting a comprised in said coating ~~layer~~ is a glass having the following composition, in mol%, for a total of 100 mol%:

- (A) SiO₂25-75
- (B) at least one oxide of a transition element of Groups IB, IIIB, VB, VIB, VIIB and VIII of the Periodic Table of the Elements that optionally exist in a number of oxidation states as defined in either of claims 3 and 4 ... 1-30
- (C) Al₂O₃0-40
- (D) ZrO₂0-10
- (E) at least one material selected from the group consisting of Li₂O, Na₂O and K₂O.....0-10
- (F) at least one material selected from the group consisting of MgO, CaO, SrO and BaO 0-40
- (H) B₂O₃0-30
- (I) P₂O₅.....0-5
- (J) TiO₂0-10

- (K) ZnO0-10
- (M) ~~the usual~~ additives.....0-1
- (N) ~~the usual~~ impurities..... complement to 100 mol%.

Claim 6 (Currently Amended): The spacer as claimed in claim 1, wherein ~~one of claims 1 to 5, characterized in that the coating is a coating consisting~~ consists of one layer.

Claim 7 (Currently Amended): The spacer as claimed in ~~one of claims 1 to 6, characterized in that a~~ claim 1, wherein each layer of the coating glass has a thickness from 1 to 10,000 nm, ~~preferably from 1 to 2000 nm.~~

Claim 8 (Currently Amended): The spacer as claimed in claim 1, wherein ~~one of claims 1 to 7, characterized in that~~ the spacer further comprises at least one layer of at least one agent ~~for promoting~~ to promote the adhesion and/or bonding of the coating to the core ~~has been placed~~ between the core and the coating.

Claim 9 (Currently Amended): The spacer as claimed in claim 1, wherein ~~one of claims 1 to 8, characterized in that the core~~ comprises ~~is made of~~ a material selected from the group consisting of glasses, ~~such as soda lime glasses, aluminosilicate type glasses and borosilicate type glasses;~~ from ceramics and from polymers, wherein said core optionally comprises ~~advantageously being formed from the same glass as that forming~~ comprised in the substrates. ~~substrates with which the spacer is intended to be used.~~

Claim 10 (Currently Amended): The spacer as claimed in claim 9, ~~characterized in that~~ wherein the core is comprises a glass having an expansion coefficient between 20 and

300°C of between 60×10^{-7} and $105 \times 10^{-7} \text{ K}^{-1}$, ~~preferably between 60×10^{-7} and $95 \times 10^{-7} \text{ K}^{-1}$~~ , ~~in particular between 75×10^{-7} and $95 \times 10^{-7} \text{ K}^{-1}$~~ , it being possible for a wherein the core optionally comprises a glass of the borosilicate type to have having an expansion coefficient of between 30×10^{-7} and $50 \times 10^{-7} \text{ K}^{-1}$.

Claim 11 (Currently Amended): The spacer as claimed in claim 1, wherein one of claims 1 to 10, characterized in that the core [[is]] comprises a glass having a temperature corresponding to the strain point of greater than 500°C.

Claim 12 (Currently Amended): The spacer as claimed in claim 1, wherein one of claims 1 to 11, characterized in that the core [[is]] comprises a glass having an elastic modulus greater than 90 GPa, ~~preferably greater than 100 GPa, in particular greater than 130 GPa.~~

Claim 13 (Currently Amended): The spacer as claimed in claim 1, wherein one of claims 1 to 12, characterized in that the core [[is]] comprises a glass having the following composition, in mol% for a total of 100 mol %

(A') SiO_2 25-75

(C') Al_2O_30-40

(D') ZrO_2 0-10

(E') at least one material selected from the group consisting of Li_2O , Na_2O and K_2O0-10

(F') at least one material selected from the group consisting of MgO , CaO , SrO and BaO0-40

(G') at least one oxide of at least one element selected from the group consisting of Y, La and elements of the lanthanide series

.....0-25

(H') B₂O₃0-30

(I') P₂O₅0-5

(J') TiO₂0-10

(K') ZnO0-10

(L') nitrogen in combined form0-20

(M') ~~the usual~~ additives0-1

(N') ~~the usual~~ impurities complement to 100 mol%.

Claim 14 (Currently Amended): The spacer as claimed in claim 1, wherein one of
~~claims 1 to 13, characterized in that the core of the spacer has a prismatic shape, especially a~~
~~pillar, elongate beam, cylindrical or spherical shape.~~

Claim 15 (Currently Amended): The spacer as claimed in claim 1, wherein the spacer
~~one of claims 1 to 14, characterized in that it has an electrical resistance to the flow of current~~
~~of between 10⁻⁵ and 10⁷ GΩ.~~

Claim 16 (Currently Amended): The spacer as claimed in claim 1, wherein the spacer
~~one of claims 1 to 15, characterized in that it has a density of greater than 3.~~

Claim 17 (Currently Amended): The spacer as claimed in claim 1, wherein the spacer
~~one of claims 1 to 16, characterized in that it is black or dark in color.~~

Claim 18 (Currently Amended): The spacer as claimed in claim 14, wherein the spacer is in the one of claims 1 to 17, of the type of those having the shape of pillars or of elongate beams, characterized in that

wherein the pillars or the edges of the elongate beams comprise metal electrodes have been deposited on the sections of the pillars or the edges of the elongate beams in order to facilitate the removal of surface charges from the spacer to the electrodes, electrodes placed on the substrates.

Claim 19 (Original): A process for manufacturing a spacer as claimed in claim 1, the process comprising: defined in one of claims 1 to 18, characterized in that at least one coating glass layer is deposited

depositing at least one coating comprising at least one layer of glass on at least one part of at least one element selected from comprised in a pre-manufactured core already manufactured or an element obtained at one stage in the manufacture of said core, wherein the latter, the glass used for the deposition having a the composition of the glass, selected so that, if this composition is if modified during said deposition, in the finished product it is the is selected to obtain a composition in the manufactured spacer to be the same as the composition of the glass comprised in the spacer as claimed in claim 1. as defined in one of claims 1 to 7.

Claim 20 (Currently Amended): The manufacturing process as claimed in claim 19, ~~characterized in that~~ wherein the core is manufactured by the process comprising: following successive operations:

- drawing of a preform bar of polygonal cross section, ~~advantageously polished on all its lateral faces;~~

- cutting ~~of~~ the drawn bar into several rods;
 - ~~assembly of these~~ assembling said rods ~~so as to be parallel to one another in such a way that they are~~ to be properly held to obtain assembled rods;
 - cutting the assembled rods to the desired length ~~in order~~ to form assembled spacers;
 - optionally, polishing ~~of~~ the ends of the assembled spacers all together; and
 - disassembling the assembled spacers from one another to form individual spacers,
~~the operations of wherein said~~ depositing the coating layer ~~or layers being~~ is carried out
- on the preform bar before ~~it is drawn~~ said drawing and/or
- on the rod before ~~it is cut~~ said cutting to the desired length and/or
- on the ends of the assembled spacers and/or
- on the individual spacers.

Claim 21 (Currently Amended): The process as claimed in claim 19, wherein ~~either of claims 19 and 20, characterized in that~~ the coating layer(s) ~~are~~ is formed by evaporation, ~~said a process comprising the steps consisting:~~

- ~~[[in]]~~ depositing at least one element to be coated, placed on a support, in a vacuum chamber and ~~[[in]]~~ placing a refractory container, ~~containing~~ comprising the glass to be deposited, in said vacuum chamber; and
- ~~[[in]]~~ heating the refractory container to a temperature between 500 and 2000°C, while maintaining the element(s) to be coated at a lower temperature in order to create conditions under which the glass sublimates and forms a coating layer on the surface of the element(s) to be coated.

Claim 22 (Currently Amended): The process as claimed in claim 19, wherein either of claims 19 and 20, characterized in that the at least one coating layer(s) are is formed by sputtering, said a process comprising the steps consisting:

- ~~[[in]]~~ placing a target in a chamber ~~containing~~ comprising a gas at low pressure, said target being formed from the glass to be deposited and facing at least one element to be coated;
- ~~[[in]]~~ causing the gas ~~contained~~ comprised in the chamber to ionize; and
- ~~[[in]]~~ controlling the electrical potential of the target ~~in such a way so~~ that gas particles bombard the target, detaching material therefrom, ~~which~~ wherein said material is then deposited on the element(s) to be coated.

Claim 23 (Currently Amended): The process as claimed in claim 19, further comprising one of claims 19 to 22, characterized in that before said depositing at least one coating, a coating glass layer is deposited, depositing at least one layer of an agent improving to improve the adhesion or bonding of the coating ~~is deposited~~ on the elements to be coated.

Claim 24 (Currently Amended): The process as claimed in claim 20, further comprising one of claims 20 to 22, characterized in that applying a heat treatment in an oxidizing or reducing atmosphere ~~is applied~~ to the coated element formed by the rod before it ~~is cut~~ said cutting to the desired length or formed by the final core ~~for the purpose of adjusting to adjust~~ the electronic conductivity and/or the secondary emission coefficient and/or the dielectric properties and/or the bonding of the coating.

Claim 25 (Currently Amended): A spacer obtained by the process as claimed in claim 19, defined in one of claims 19 to 24.

Claim 26 (Currently Amended): The ~~use of a~~ spacer as claimed in claim 1, wherein the device is a defined in one of claims 1 to 18 or manufactured by the process as defined in one of claims 19 to 24 as a spacer for display screen, screens, a vacuum glazing and a flat lamp lamps comprising at least two glass sheets.

Claim 27 (Currently Amended): A display screen, ~~especially of the plasma or field emission type, in particular of the field emission type,~~ vacuum glazing and flat lamp comprising at least two glass sheets separated by spacers as claimed in claim 1, defined in one of claims 1 to 18 or manufactured by the process as defined in one of claims 19 to 24.